

CLAIMS

1. A method of screening for commonly shared light chains, wherein the method comprises the steps of:

5 (a) generating a host secreting the heavy chain of an antibody that binds to a desired antigen;

(b) introducing an antibody light chain library into the host of step (a) to cause secretion of phage libraries presenting antibodies composed of the heavy chain and the light chains;

10 (c) selecting a phage library that displays antibodies that bind specifically to the desired antigen of step (a);

(d) introducing the phage library selected in step (c) into a host secreting the heavy chain of an antibody that binds to a desired antigen different from the antigen of step (a) to cause secretion of phage libraries presenting antibodies composed of the heavy chains and light chains; and

15 (e) selecting a phage library that displays antibodies that bind specifically to the desired antigen of step (d).

2. A method of screening for commonly shared light chains, wherein the method comprises the steps of:

20 (a) generating a host secreting the heavy chain of an antibody that binds to a desired antigen;

(b) introducing an antibody light chain library into the host of step (a) to cause secretion of phage libraries presenting antibodies composed of the heavy chain and the light chains;

25 (c) selecting a phage library that displays antibodies that bind specifically to the desired antigen of step (a);

(d) introducing the phage library selected in step (c) into a host secreting a heavy chain comprising an amino acid sequence different from that of the heavy chain of step (a) to cause secretion of phage libraries that display antibodies composed of the heavy chains and light chains; and

30 (e) selecting a phage library that displays antibodies that bind specifically to the antigen recognized by the heavy chain of step (d).

3. The method of claim 1 or 2, wherein the antibody heavy chain is Fd and the antibody composed of said heavy chains and light chains is Fab.

35 4. The method of claim 1 or 2, wherein the host is *E. coli*.

5. The method of claim 1 or 2, wherein steps (b) to (e) are repeated twice or more.

6. The method of claim 1, wherein the method further comprises the following steps of:

5 (f) introducing the phage library selected in step (e) into a host secreting the heavy chain of an antibody that binds to a desired antigen different from the antigens of steps (a) and (d) to cause secretion of phage libraries that display antibodies composed of the heavy chains and light chains; and

10 (g) selecting a phage library that displays antibodies that bind specifically to the desired antigen of step (f).

7. The method of claim 2, wherein the method further comprises the following steps of:

15 (f) introducing the phage library selected in step (e) into a host secreting a heavy chain comprising an amino acid sequence different from those of the heavy chains of steps (a) and (d) to cause secretion of phage libraries that display antibodies composed of the heavy chains and light chains; and

(g) selecting a phage library that displays antibodies that bind specifically to the antigen recognized by the heavy chain of step (f).

20 8. A light chain obtained by the method of any one of claims 1 to 7.

9. An antibody comprising the light chain of claim 8.

10. A method for generating antibody light chains, wherein the method comprises the steps of:

25 (a) selecting an antibody light chain from the screening method of any one of claims 1 to 7;

(b) generating a vector capable of expressing the selected light chain based on its genetic sequence;

(c) introducing the vector into a host cell; and

30 (d) culturing said host cell.

11. A host that is infected with a phage capable of presenting a light chain and comprises a vector capable of expressing a heavy chain.

35 12. An *E. coli* that is infected with a phage capable of presenting a light chain and comprises a vector capable of expressing a heavy chain.